Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

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RoHS Available

Three Phase Standard And Fast Recovery Rectifiers

DESCRIPTION

This series of high-current three-phase bridge rectifiers are constructed with hermetically sealed rectifiers built with the same design and construction techniques used in military applications for the upmost in reliability. These include voidless glass encapsulation and internal "Category 1" metallurgical bonds. These 15A to 25A rectifier bridges are available with working peak reverse voltage ratings of 100 to 600 V per leg.

Important: For the latest information, visit our website http://www.microsemi.com.

(Actual appearance may vary)

NC Package

FEATURES

- Current ratings to 25 amps
- V_{RWM} from 100 to 600 volts (see part nomenclature for all options)
- 150 ºC junction temperature
- Surge ratings to 150 amps
- Recovery times to 500 ns
- MIL-PRF-19500 similarity
- RoHS compliant versions available

APPLICATIONS / BENEFITS

- Electrically isolated aluminum case
- Controlled avalanche characteristics

MAXIMUM RATINGS

Parameters/Test Conditions		Symbol	Value	Unit
Junction and Storage Temperature		T_J and T_{STG}	-65 to +150	ºC
Thermal Resistance Junction-to-Case (678 and 682 series)		$R_{\Theta JC}$	1.5	ºC/W
Thermal Resistance Junction-to-Case (695 and 696 series)		$R_{\Theta JC}$	3.0	ºC/W
Maximum Average DC Output Current: @ T_C = 55 ºC	678 695 682 696	I_O	25 15 20 15	A
Maximum Average DC Output Current: @ T_C = 100 ºC	678 695 682 696	I_O	18.5 9 14 9	A
Forward Surge Current (Peak): @ T_C = 100 ºC	678 695 682 696	I_{FSM}	150 80 150 60	A
Solder Temperature @ 10 s			260	°C

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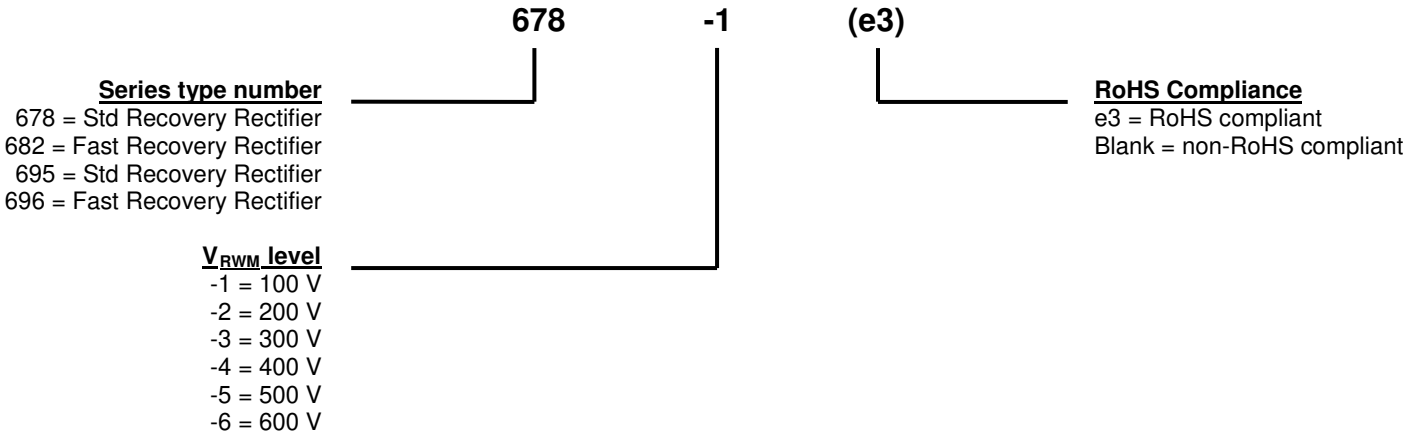
MECHANICAL and PACKAGING

- CASE: Aluminum
- TERMINALS: Tin/lead or RoHS compliant matte tin
- MARKING: Alternating current input: AC
  Cathode positive output: +
  Anode negative: -
  Part number is printed on the body
- WEIGHT: Approximately 30 grams
- See Package Dimensions on last page.

PART NOMENCLATURE



SYMBOLS & DEFINITIONS

Symbol	Definition
I_{FSM}	Surge Peak Forward Current: The forward current including all nonrepetitive transient currents but excluding all repetitive transients (ref JESD282-B)
I_O	Average Rectified Output Current: The Output Current averaged over a full cycle with a 50 Hz or 60 Hz sine-wave input and a 180 degree conduction angle.
V_F	Forward Voltage: A positive dc anode-cathode voltage the device will exhibit at a specified forward current.
I_R	Reverse Current: The dc current flowing from the external circuit into the cathode terminal at the specified voltage V_R.
$V_{(BR)}$	Breakdown Voltage: A voltage in the breakdown region.
V_{RWM}	Working Peak Reverse Voltage: The peak voltage excluding all transient voltages (ref JESD282-B). Also sometimes known historically as PIV.
t_{rr}	Reverse Recovery Time: The time interval between the instant the current passes through zero when changing from the forward direction to the reverse direction and a specified decay point after a peak reverse current occurs.

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ELECTRICAL CHARACTERISTICS

PART NUMBER (Note 1)	MAX FORWARD VOLTAGE PER LEG V_F (Note 2)	MAX REVERSE PEAK CURRENT I_R @ V_{RWM} (Note 1)		MAX RECOVERY TIME t_{rr} (I_F = 1.0 A, I_{RM} = 1.0 A, $I_{R(REC)}$ = 0.5 A)
	@ 25 ºC	@ 25 ºC	@ 100 ºC	
	Volts	µA	µA	ns
678	1.2 @ 10 A	10	200	-
682	1.2 @ 6 A	10	200	500
695	1.2 @ 2 A	5	150	-
696	1.2 @ 2 A	5	150	500

NOTES: **1.** MAX WORKING PEAK REVERSE VOLTAGE (V_{RWM}) numbering:

PART NUMBER				WORKING PEAK REVERSE VOLTAGE V_{RWM}	MINIMUM BREAKDOWN VOLTAGE $V_{(BR)}$
Std. Recovery		Fast Recovery		Volts	Volts
678-1	695-1	682-1	696-1	100	110
678-2	695-2	682-2	696-2	200	220
678-3	695-3	682-3	696-3	300	330
678-4	695-4	682-4	696-4	400	440
678-5	695-5	682-5	696-5	500	550
678-6	695-6	682-6	696-6	600	660

2. Pulse test: Pulse width 300 µsec, duty cycle 2%.

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GRAPHS

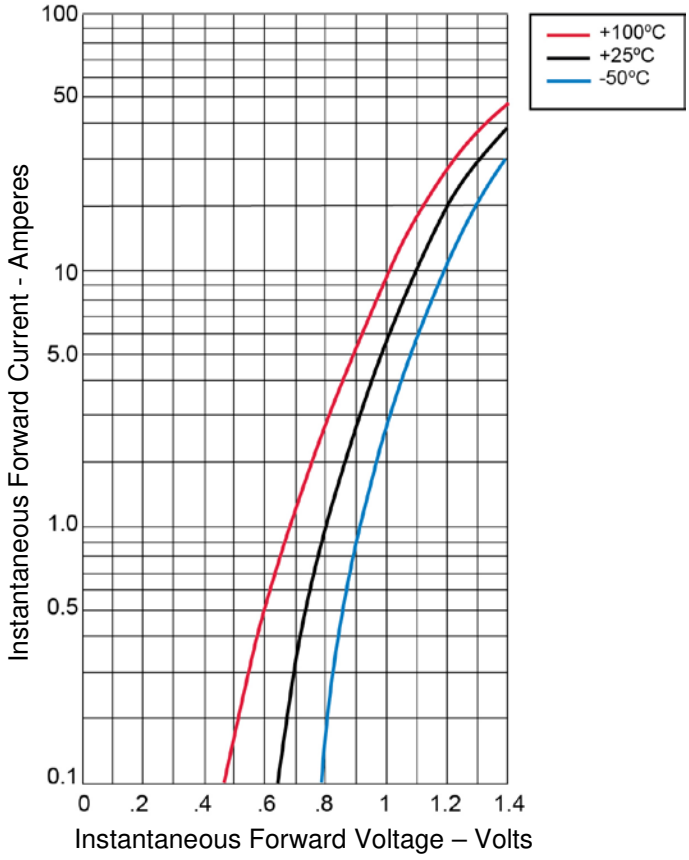

FIGURE 1
Typical Forward Characteristics – **Per Leg 678 Series**

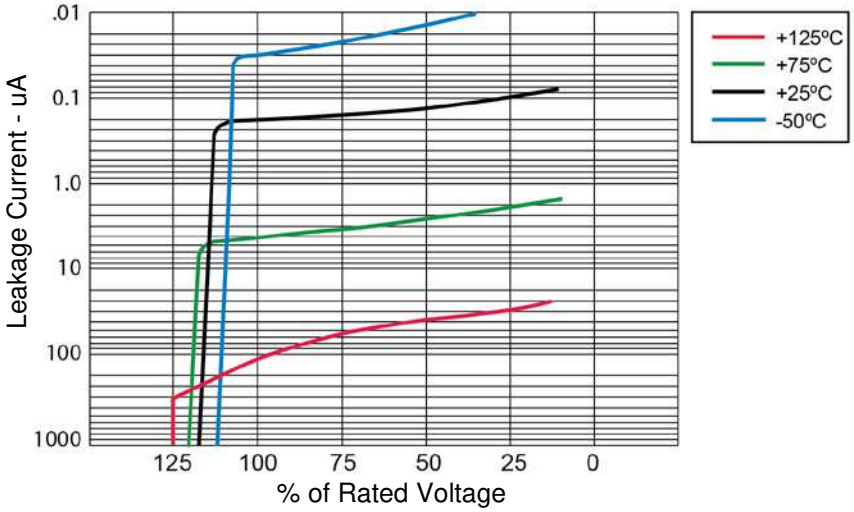

FIGURE 2
Typical Reverse Leakage Current – **Per Leg 678 & 682 Series**

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GRAPHS (continued)

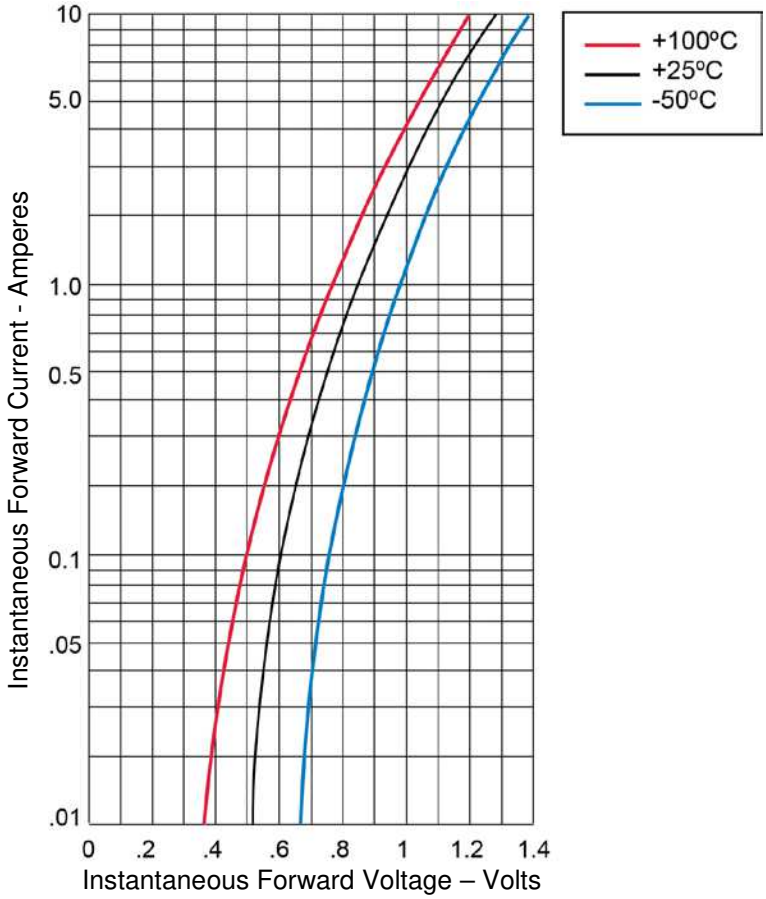

FIGURE 3
Typical Forward Characteristics – **Per Leg 682 Series**

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GRAPHS (continued)

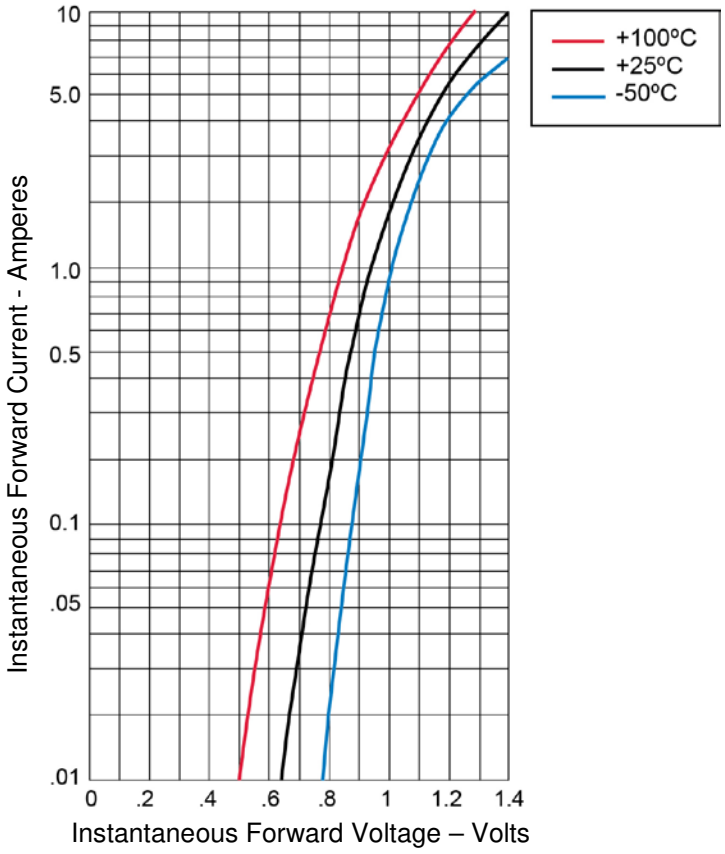

FIGURE 5
Typical Forward Characteristics – **Per Leg 695 & 696 Series**

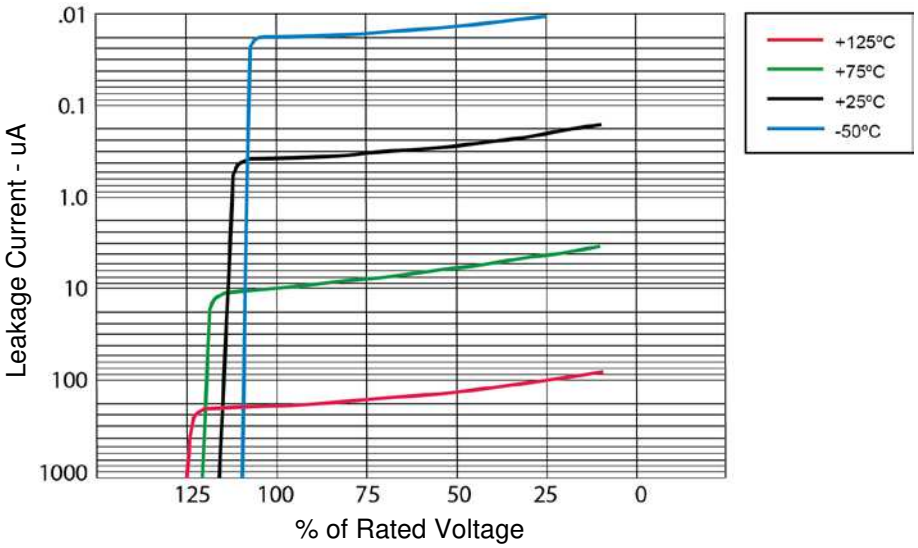

FIGURE 6
Typical Reverse Leakage Current – **Per Leg 695 & 696 Series**

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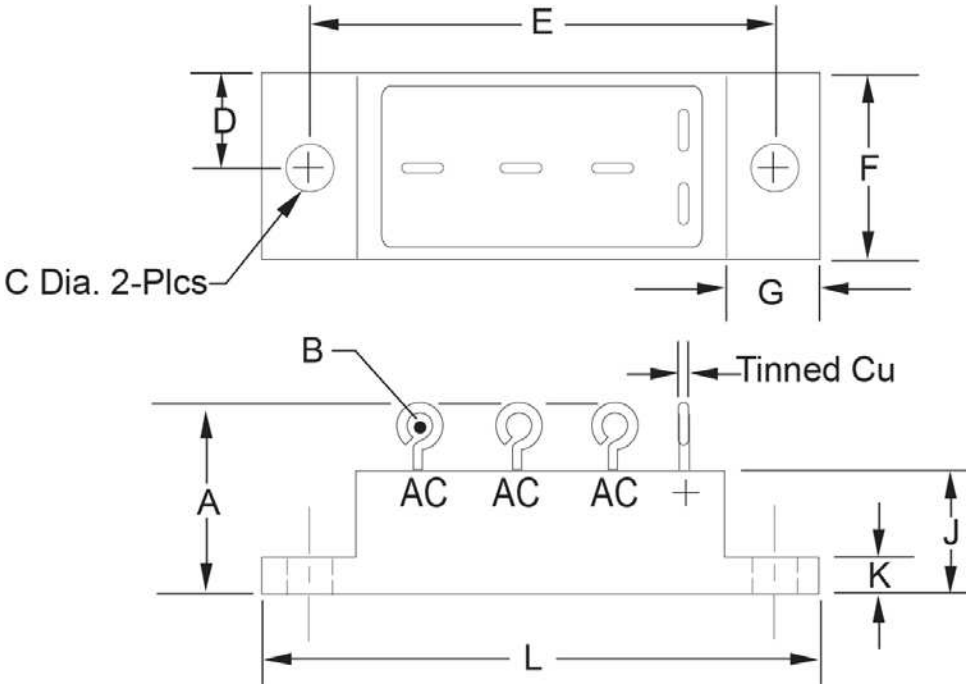
PACKAGE DIMENSIONS



Ltr	Dimensions Inches		Dimensions Millimeters	
	MIN	MAX	MIN	MAX
A	-	0.820		20.83
B	0.09 TYP		2.29 TYP	
C (dia)	0.164	0.174	4.17	4.42
D	0.365	0.385	9.27	9.78
E	1.870	1.880	47.50	47.75
F	0.740	0.760	18.80	19.30
G	0.370	0.390	9.40	9.91
H	0.40 TYP		1.02 TYP	
J	0.486	0.506	12.34	12.85
K	0.115	0.135	2.92	3.42
L	2.240	2.260	56.90	57.40

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